



Solihull College
& University Centre

**HNC ELECTRICAL &
ELECTRONIC
ENGINEERING**

Programme Specification



Programme Specification

Title of Programme: **HNC ELECTRICAL & ELECTRONIC ENGINEERING**

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

- | | |
|---|---|
| 1. Awarding Body | Edexcel BTEC |
| 2. Teaching location | Woodlands Campus, Solihull College |
| 3. Accreditation details | N/A |
| 4. Final award | Higher National Certificate |
| 5. Name of award | Edexcel BTEC Level 4 HNC in Electrical and Electronic Engineering |
| 6. Codes | |
| a. UCAS code | N/A |
| b. Solihull Qualification Code | QET4BE03 |
| c. Edexcel Programme Code (& approval dates) | 500/8831/2 10 th October 2008 |
| 7. QAA Subject Benchmark or other external reference | Engineering 2010 Subject Benchmark Statement |
| 8. Date this specification applies from | 02/09/2011 |

Approved

Mick Nicholl

Head of School

Engineering

9. Educational Aims of the Programme

- To provide an educational foundation for a range of technical careers in Engineering;
- To provide specialised studies directly relevant to individual vocations and professions
- To provide flexibility, knowledge, skills and motivation as a basis for career development and as a basis for progression to graduate studies
- To develop students' ability in Engineering through effective use and combination of the knowledge and skills gained in different parts of the programme;
- To develop a range of skills, techniques and personal attributes essential for successful performance in the working place.

10. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas:

Subject knowledge and critical understanding including:

A sound basic knowledge and understanding that includes:

- Mathematical methods relevant to Electrical/Electronic Engineering
- Electrical/Electronic Engineering good practice
- Scientific principles underpinning Electrical/Electronic Engineering
- Use of Information and Communication Technology (ICT) relevant to Electrical/Electronic Engineering
- General principles of and design techniques for components and circuits
- An overview of Management and Business practices

Higher level academic/ intellectual skills including:

The ability to:

- Understand and apply principles and concepts;
- Present reasoned arguments and apply judgement;
- Analyse and evaluate practical problems and provide logical solutions.
- Capacity to formulate solutions to engineering problems with a level of independence

Higher practical and professional skills including:

The ability to:

- Select and apply routine mathematical methods to the modelling and analysing of engineering problems

- Select and apply scientific principles and set up appropriate equipment for the analysis and solution of engineering problems
- Select and apply appropriate computer-based methods to solve engineering problems
- Produce a design for a system, component or process to meet a specified requirement
- Research and undertake tests for a design solution and report the results effectively
- Apply engineering techniques to take account of a range of commercial and industrial constraints
- Apply management principles and techniques to the solution of engineering problems

Higher Level transferable skills development includes:

The ability to:

- Manage and develop self;
- Work with and relate to others;
- Communicate ideas effectively both orally and in writing;
- Apply numeracy;
- Apply technology;
- Manage tasks and solve problems;
- Apply design techniques and show creativity/originality in work produced

Teaching and Learning Methods

- Acquisition of core knowledge is through a mixture of lecture/presentations/demonstration/laboratory experiment and directed study
- Analytic thinking skills are developed through discussion and self assessment test questions.
- Practical skills are developed through laboratory experiments and the use of circuit simulation software

- Common skills are developed through assignments and presentations, particularly in the project unit

Assessment methods

Assessment activities provide major opportunities for learning. Assessment criteria are linked to and stated in individual module outcomes.

Assessment methods include:

- Unseen mathematical tests
- Case studies or relevant workplace scenarios
- Practical Assessment
- Assignment Reports
- Oral presentations within the project unit
- Individual and paired practical work and group project work

11. Programme Structure

These are examples of units you may study

Students Commence Full Time HE study

Electrical / Electronic Engineering

Year 1

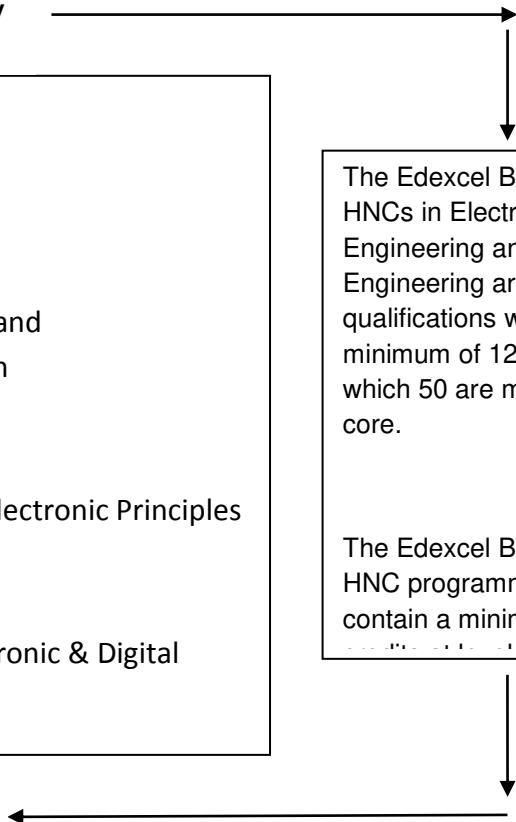
- Analytical Methods for Engineers
- Engineering Science
- Combinations and sequential Logic

- Project Design and Implementation
- Electrical and Electronic Principles
- Electrical, Electronic & Digital Principles

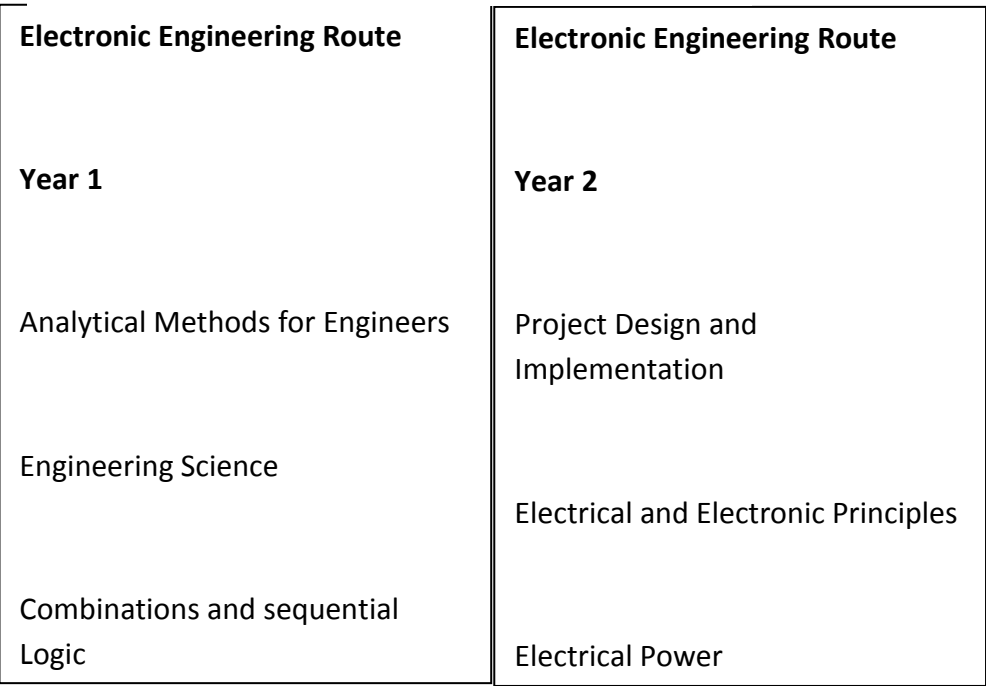
The Edexcel BTEC Level 4 HNCs in Electrical Engineering and Electronic Engineering are qualifications with a minimum of 120 credits of which 50 are mandatory core.

The Edexcel BTEC Level 4 HNC programmes must contain a minimum of 65

Higher National Certificate Achieved



Students Commence Part Time HE study



The Edexcel BTEC Level 4 HNCs in Electrical Engineering and Electronic Engineering are qualifications with a minimum of 120 credits of which 50 are mandatory core.

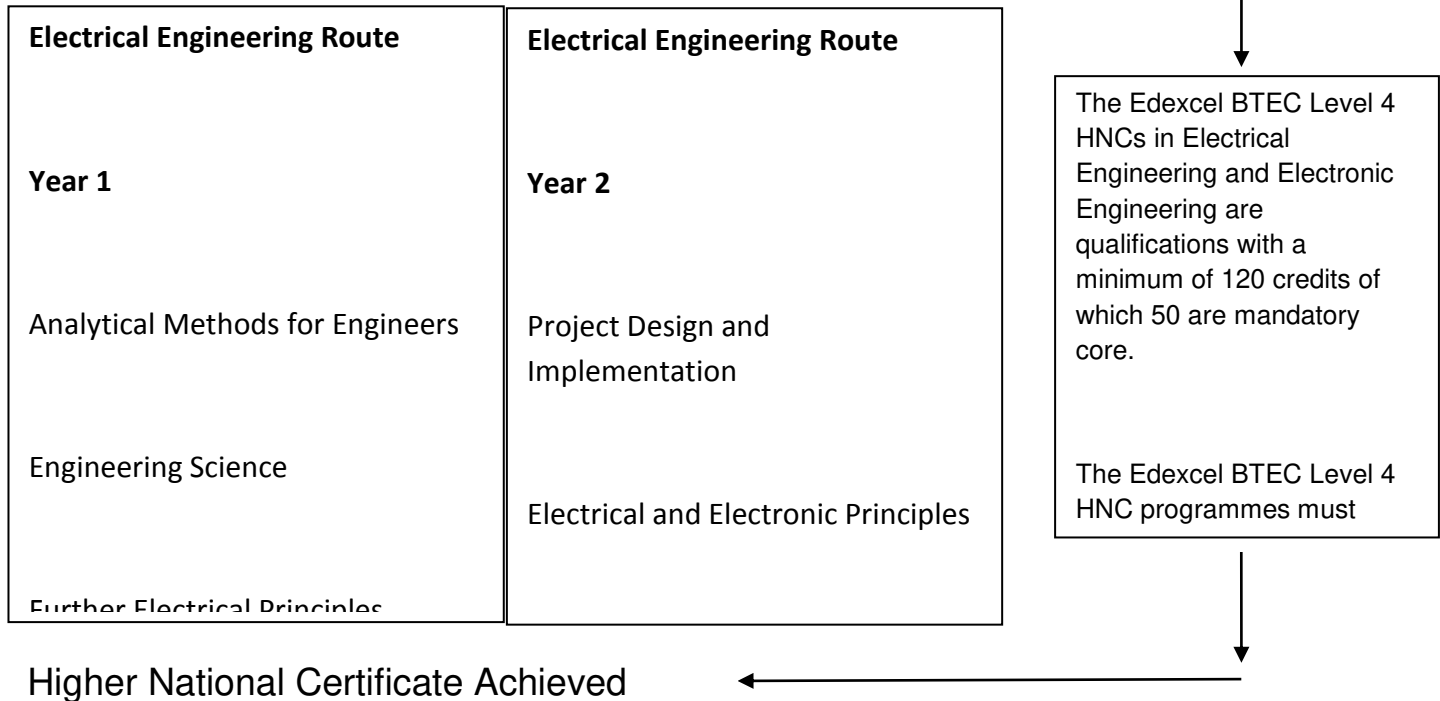
The Edexcel BTEC Level 4 HNC programmes must contain a minimum of 65



Higher National Certificate Achieved



Students Commence Part Time HE study



Progression to Year 2

Progression onto the second year of the programme normally requires the completion of all 1st year units.

Progression to HND for Full-Time Students

Progression onto a full-time HND in Aeronautical Engineering normally requires successful completion of the HNC in Aeronautical Engineering

Progression to HND for Part-Time Students

Upon successful completion of the HNC, it will be possible to discuss routes of study at HND level.

12. Support for Students and Their Learning

Student progression on course is supported both by subject tutors and central College services and includes:

- An induction programme introducing new students to the subject of study, higher level skills that need to be developed, and the college facilities (including the library, IT facilities, staff and other students).
- College and course/ module handbooks available in print and electronic format on Moodle.
- Personal and academic support is integrated in teaching provided by supportive and accessible tutors and identified 1:1 support sessions are also available.
- A modern well-equipped library and Up-to-date ICT equipment.
- Study skills sessions integrated in programme.
- Personal development planning sessions integrated into programme
- Up-to-date Computer laboratories with specialist facilities for computer networking and multimedia computing.
- Various workshops including wind tunnel and flight simulator
- Study skills sessions integrated in programme and organised on a regular basis;
- High specification computers with latest educational software.
- Planned visits and speakers
- Access to counsellors and support for students with special needs.
- Written assignment / assessment feedback (normally provided with 2 weeks of assessment submission).
- Access to regularly updated course section and college wide sections on the college's intranet Moodle

13. Criteria for Admission

Normally the course enrolls students, who are in, or plan to enter, employment and who have reached the minimum age of 18. Students enter with at least one of the following qualifications:

Entry Requirements:

4 GCSEs grade C or above, plus

Full-time Entry

3 A-levels (240 UCAS Points)

Extended Diploma in Engineering (MMM)

Part-time Entry

1 A Level, or 2AS Levels (40 points),

or BTEC National in a relevant engineering qualification,

or an equivalent qualification

Mature students, over the age of 21, with a suitable background or experience may be accepted without formal qualifications. All such students are interviewed by the programmes Internal Quality Moderator (IQM) before an offer is made

14. Evaluating and Improving the standards of Teaching and Learning

Evaluation of the Standards of Teaching and Learning is undertaken using the results of the following documents;

- Student feedback questionnaires, both initial impressions and the spring survey
- Module review forms completed by students at the end of every module and summarised by the course leader.
- Student input to the Programme Quality Board held twice a year.
- Student representations made through the HE Student Council.
- Action areas fed by the above to the course based Annual Monitoring report.
- Findings of the teaching observation scheme and recommendations for improvement that are made
- Quality Audit of the programme undertaken by Director of HE and an external observer.
- External Verifiers report and audit of assessed work

The ways in which the quality of this programme is checked, both inside and outside the college, are:

- External Examiners, who produce an annual report
- Professional body accreditation/inspection visits
- Annual module review
- Periodic programme review
- Invitation to attend Programme Quality Boards

15. Regulation of Assessment

- The programme is the subject of an Annual Monitoring Report (AMR) the last section of which is a Quality Improvement Plan (QIP), written by the course leader with help and input from the teaching and tutoring team this is passed to the Head of School of Business for audit and from them to the quality unit for further audit and acceptance as part of the College plan.
- Assessment rules and regulations and quality standards are those that are laid down in the Quality standards requirements of the College Academic Board.
- Assessment and assessment vehicles are regulated by the internal verification system for each programme which is itself Audited by the quality unit within the College and also by the External Verifier appointed by Edexcel.
- External verification of assessment and of the provision and standards of teaching are regulated by BTEC Edexcel and their quality unit, the programme has to seek approval for continuance every 5 years. Their requirements are monitored annually by the visit and report of their appointed external verifier.

- Also the programme is the subject of periodic review by QAA, ensuring that national benchmarks are met throughout the programme.

16. Enhancement

- An action plan is provided in each annual programme report and progress in achieving enhancements is regularly reviewed
- Good practice in teaching and learning is developed and disseminated through regular staff development workshops and through participation in internal verification of completed student work.
- Staff development activities are discussed at annual appraisal interviews and are actively encouraged to develop their professional practice and industrial experience.

17. Programme Resources

DIDIAC LABATORY

Parametric CAD Software

Robotic Arm

Picoscopes

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Document History

1. 01/02/2011 Document converted to master template
2. 02/09/2011 Document converted to QCF
3. 23/06/2013 Updated for public information
4. 21/10/2013 Staff Changes
5. 14/07/2014 Amendment to add full-time route and additional resources



Programme Leader

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Date checked against public
information

02/09/2011

*If revisions are to made to the web site, these must be noted
here and the document amended when these have been done.*

Specification Author

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